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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/539,024

10/11/2005

Rathindra N. Bose

2384.00059

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04/01/2008

EXAMINER

LEADER, WILLIAM T

ART UNIT

PAPER NUMBER

1795

MAIL DATE

DELIVERY MODE

04/01/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/539,024	Applicant(s) BOSE ET AL.	
	Examiner WILLIAM T. LEADER	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2 and 4-24 is/are pending in the application.
- 4a) Of the above claim(s) 6-23 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,5 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Receipt of the papers filed on December 26, 2007, is acknowledged. Claim 3 has been canceled. Applicant has listed claims 7-23 as withdrawn from consideration. At the first page of the Remarks (which appears to be page 9 of the response), applicant states that these claims have been withdrawn due to a restriction requirement made by telephone on April 4, 2007. In view of applicant's Remarks, claims 7-23 are considered to be withdrawn. Claims 1, 2, 4, 5 and 24 are under consideration.

Specification

2. The amendment filed December 26, 2007, is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the description of electrocatalytic polymerization in paragraphs [0022], [0023], [0024], [0027], [0031], [0034], [0044] and [0046].

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 2, 4, 5 and 24 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

5. As originally presented, claim 1 recites coating a carbon article with a metal by cyclic voltammetrically electrodepositing the metal on the carbon article. Applicant has amended claim 1 to recite coating a carbon article with a metal by reductively electropolymerizing the metal on the carbon article through cyclic voltammetry. The amendment to claim 1 is considered to introduce new matter. At page 11 of the response, applicant points to MPEP 2163.07 II which indicates that correction of an obvious error does not constitute new matter. The material added by applicant's amendment is not considered to be a correction of an obvious error. There is no indication in the specification as filed that it was recognized that the disclosed cyclic voltammetry process resulted in reductive electropolymerization.

6. Applicant has submitted a declaration by co-inventor Rathindra N. Bose.

While not stated by applicant, the declaration is considered to have been filed under 37 CFR 1.132. At the top of page 2 of the declaration, declarant Bose states that Verbrugge discloses conventional cyclic voltammetry whereas applicant use cyclic voltammetry to electrocatalyze polymerization of platinum complexes on carbon substrates followed by reduction. However, there is nothing in applicant's specification to indicate that the process of applying cyclic voltammetry is not conventional. Rather paragraph [0031] states "The preferred method of electrodeposition utilized voltammetry." Voltammetry is described in paragraphs [0031] and [0032]. There is no indication in the description that any of the process parameters used in the voltammetry are not conventional.

7. At page 2 of the declaration, it is stated that Figure 2 in the present application clearly demonstrates the deposition technique is based on electrocatalysis leading to polymerization of platinum complexes on carbon surfaces. Declarant Bose describes Figure 2 as showing a dramatic increase in current in cycles 1, 2, 3 etc. compared to later cycles, while for conventional electrodeposition of platinum one would expect a slow growth in -0.7V, and the current in successive cycles would depend on the bulk concentration of the platinum phosphate complex. No evidence of a conventional electrodeposition process (presumably that of Verbrugge since, as noted, applicant describes the cyclic voltammetry of Verbrugge

as conventional, and since Verbrugge is the closest prior art) has been presented for comparison. The statement that Figure 2 shows the occurrence of polymerization appears to be a conclusion. No direct evidence of the presence of a polymer has been presented.

8. At page 3 of the declaration, it is stated that there are further differences between Verbrugge and the present invention and that the present invention's electropolymerization is applied to anionic complexes unlike the cationic complex of Verbrugge. There is no limitation in any of the claims related to anionic complexes or cationic complexes.

9. Assuming *arguendo* that a difference in the curves of Figure 2 and the curves produced by conventional electrodeposition were demonstrated, it is considered that this difference would be a result of some difference in the manner in which the process was carried out. In paragraph [0028] of the specification it is stated that the term "carbon article" is intended to include all carbon-based materials. In paragraph [0029] it is stated that the term "metal" is used to reference a metal that is capable of being electrodeposited on a carbon article. In paragraph [0035] it is stated that the method utilizes electrochemical reduction of platinum compounds that can be easily reduced at the electrode surfaces. The process of Verbrugge utilized a carbon substrate, a metal, and a platinum compound all of which fall within the definitions given by applicant. Instant claim 4 recites

varying the electric potential from about zero to about -1.0 volts with a rate of potential change of about 100 millivolts per second. Verbrugge also used a sweep rate of 100 mV/s and overlapping voltages. Thus, the parameters disclosed by applicant are those used by Verbrugge. If these parameters resulted in “conventional cyclic voltammetry” in the process of Verbrugge, it is not apparent why they would result in nonconventional cyclic voltammetry when performed by applicant. Applicant's specification is not considered to be enabling for the claims as now amended. There is no teaching which would allow one of ordinary skill to determine how the process is to be carried out in a nonconventional as opposed to a convention manner.

Claim Rejections - 35 USC § 102

10. Claims 1, 2, 4, 5 and 24 are rejected under 35 U.S.C. 102(b) as being anticipated by Verbrugge (5,284,571) for the reasons of record.

Response to Arguments

11. Applicant's arguments parallel the declaration by Rathindra Bose which has been discussed above. Applicant has provided no cogent argument as to why the actual process steps recited in the claims differ from the process steps carried out by Verbrugge. Applicant has argued that the mechanism or result produced by the

process steps is different, i.e., applicant's process results in reductively electropolymerizing. However, applicant has presented no cogent explanation as to why the same claimed process steps produce a different mechanism or result when carried out by applicant than when carried out by Verbrugge using the same parameters disclosed by applicant.

12. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **WILLIAM T. LEADER** whose telephone number

is (571) 272-1245. The examiner can normally be reached on Mondays-Thursdays and alternate Fridays, 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Susy Tsang-Foster can be reached on 571-272-1293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harry D Wilkins, III/
Primary Examiner, A.U. 1795

/William Leader/
March 30, 2008

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